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Professional Experience and Education

North Carolina State University, Raleigh, NC
Research Associate, Center for Research in Scientific Computation
August 2006-Present

Statistical and Applied Mathematical Sciences Institute, RTP, NC
Member of the Waves and Imaging working group in the long-term program on
Random Media, September 2007-Present

Statistical and Applied Mathematical Sciences Institute, RTP, NC
Postdoctoral Fellow in the National Defense and Homeland Security Program
August 2005-August 2006

Rensselaer Polytechnic Institute, Troy, NY
Ph.D. in Mathematics, July 2005
Thesis: *Recovering Inhomogeneities In A Waveguide Using Eigensystem Decomposition*

Institute for Pure and Applied Mathematics, UCLA, Los Angeles, CA
Participant in the long-term program *Inverse Problems: Computational Methods and
Emerging Applications*, September 8–December 13, 2003

Rensselaer Polytechnic Institute, Troy, NY
M.S. in Applied Mathematics, December 2002

JP Morgan Chase & Co., New York City, NY
Summer Intern, June–August 2000 and June–August 2001
Project Title: *Portfolio Rebalancing with Linear Programming*

Alexandru Ioan Cuza University, Iasi, Romania
M.S. in Optimization and Numerical Approximation, June 1998
Thesis: *The Mixed Finite Element Method*

Alexandru Ioan Cuza University, Iasi, Romania
B.S. in Mathematics, June 1997
Thesis: *The Derivative of a Measure Function*

Research Interests

Inverse Problems for Partial and Ordinary Differential Equations, Numerical Solutions
for Differential Equations, Scattering Theory, Sensitivity Analysis for Dynamical
Systems, Model-Oriented Experiment Design.

Publications	<p><i>Recovering Inhomogeneities in a Waveguide using Eigensystem Decomposition</i> (with J. McLaughlin), <i>Inverse Problems</i>, Vol. 22, June 2006, pp.1227–1246.</p> <p><i>Time Delay Systems with Distribution Dependent Dynamics</i> (with H.T Banks and H.K. Nguyen), <i>Annual Reviews in Control</i>, Vol. 31, April 2007, pp. 17-26</p> <p><i>Sensitivity of Dynamical Systems to Parameters in a Convex Subset of a Topological Vector Space</i> (with H.T Banks and H.K. Nguyen), <i>Mathematical Biosciences and Engineering</i>, Vol. 4(3), July 2007 pp. 403–430</p> <p><i>Stochastic and Deterministic Models for Agricultural Production Networks</i> (with P. Bai, H.T Banks et al) <i>Mathematical Biosciences and Engineering</i>, Vol. 4(3), July 2007 pp. 373–402</p> <p><i>Sensitivity Functions in Mathematical Modeling</i> (with H.T Banks and S. Ernstberger) (accepted, <i>Journal of Inverse and Ill-Posed Problems</i>)</p> <p><i>An Existence and Uniqueness Result for a Waveguide Problem</i> (with J. McLaughlin) (work in progress)</p>
Conference Proceedings	<p><i>Time Delay Systems with Distribution Dependent Dynamics</i> (with H.T Banks and H.K. Nguyen) Plenary Paper, 6th IFAC Workshop on Time Delay Systems L’Aquila, Italy, July 10-13, 2006</p>
Other Professional Activities	<p>Referee for <i>Nonlinear Analysis Series B: Real World Applications</i>, Elsevier</p> <p>Postdoc mentor in the SAMSI/CRSC Workshop (UGW 2006) for undergraduate students, NC State University, May 22-26, 2006</p> <p>Postdoc mentor in the SAMSI Two-Day Undergraduate Workshop, SAMSI, March 3-4, 2006</p>
Teaching Experience	<p>Instructor for Calculus I, North Carolina State University, Raleigh, NC September 2007-December 2007</p> <p>Instructor for Calculus I, Rensselaer Polytechnic Institute, Troy, NY September 2004-December 2004</p> <p>Teaching Assistant for Calculus I and II, Rensselaer Polytechnic Institute, Troy, NY September 1999-December 2001</p> <p>Mathematics Teacher, ”Nicolina Highschool”, Iasi, Romania September 1997-August 1999</p>
Awards	<p>Laureate of the Romanian Mathematics National Olympics, Ramnicu Valcea, Romania, April 1986.</p>

- Invited Talks in Conferences**
- Generalized Sensitivity Functions and their uses in Inverse Problems*, Computational and Mathematical Methods in Science and Engineering, Illinois Institute of Technology, Chicago, IL June 20-23, 2007
- Generalized Sensitivity Functions and their uses in Biomathematical Models*, Atlantic Coast Conference on Mathematics in the Life and Biological Sciences, Virginia Tech, Blacksburg, VA May 3-5, 2007
- Recovering inhomogeneities in a waveguide using eigensystem decomposition*, IPAM Reunion Conference for Inverse Problems: Computational Methods and Emerging Applications, UCLA Lake Arrowhead, CA June 11-16, 2006
- An eigensystem decomposition method for an inverse medium problem in a waveguide*, Institute for Pure and Applied Mathematics, UCLA Lake Arrowhead, CA June 5-10, 2005
- Rensselaer Polytechnic Institute, Opening Conference for the Center for Inverse Problems, April 6, 2004.
- Inverse Problems and Tomography, AMS Fall Eastern Sectional Meeting, State University of New York at Binghamton, Binghamton, NY, October 12, 2003.
- Poster Presentations**
- Recovering inhomogeneities in a waveguide using eigensystem decomposition*, SIAM Annual Meeting and SIAM Conference on Analysis of Partial Differential Equations, Boston, MA, July 10-14, 2006
- Seminar Talks**
- Sensitivity Functions and their uses in Parameter Estimation Problems*, Biomath Seminar, North Carolina State University, Raleigh, NC, September 18, 2007
- An inverse medium problem in a waveguide*, Postdoc Seminar, Statistical and Applied Mathematics Institute, RTP, NC, November 17, 2005
- Direct and inverse problems in waveguides*, Graduate Student Seminar, RPI, Troy, NY, October 8, 2003
- Seminar on Wave Guides , IPAM, UCLA, Los Angeles, CA, October 3, 2003
- The Linear Sampling Method for the Inverse Acoustic Scattering Problem for an Obstacle*, Graduate Student Seminar, RPI, Troy, NY, March 19, 2003
- Focusing and imaging using eigenfunctions of the scattering operator*, Weekly Seminar on Optimization, RPI, Troy, NY, April 19, 2002

**Attended
Conferences and
Workshops**

Waves and Imaging Workshop, Program on Random Media,
SAMSI, Research Triangle Park, NC, January 31-February 1, 2008

Opening Workshop for the Program on Random Media,
SAMSI, Research Triangle Park, NC, September 23-26, 2007

Computational and Mathematical Methods in Science and Engineering, Illinois
Institute of Technology, Chicago, IL June 20-23, 2007

Atlantic Coast Conference on Mathematics in the Life and Biological Sciences, Virginia
Tech, Blacksburg, VA May 3-5, 2007

SIAM Annual Meeting and SIAM Conference on Analysis of Partial Differential
Equations, Boston, MA, July 10-14, 2006

IPAM Reunion Conference for Inverse Problems II: Computational Methods and
Emerging Applications, UCLA Lake Arrowhead, June 11-16, 2006

Kickoff Workshop for National Defense and Homeland Security (NDHS) Program,
SAMSI, Research Triangle Park, NC, September 11-14, 2005

IPAM Reunion Conference for Inverse Problems I: Computational Methods and
Emerging Applications, UCLA Lake Arrowhead, June 5-10, 2005

Rensselaer Polytechnic Institute, Opening Conference for the Center for Inverse
Problems, April 6, 2004.

Inverse Problems and Tomography, AMS Fall Eastern Sectional Meeting, State
University of New York at Binghamton, Binghamton, NY, October 11-12, 2003

Applied Inverse Problems: Theoretical and Computational Aspects
IPAM/SIAM/EMS Conference, UCLA Lake Arrowhead, May 18-23, 2003

Opening Workshop on Inverse Problem Methodology in Complex Stochastic Systems,
SAMSI, Research Triangle Park, NC, September 21-24, 2002

Applied Math Days, Rensselaer Polytechnic Institute, Troy, NY
April 19-20, 2002 and October 20-21, 2000

**Professional
Affiliations**

American Mathematical Society
Society for Industrial and Applied Mathematics

May 6, 2008